

WHAT IS CLAIMED IS:

1. An interdomain routing system wherein a node,
comprising:

own intradomain path selection means for
selecting a path by exchanging information about a path
5 in the own domain;

interdomain path selection means for receiving
information about a path between domains to select a
path;

destination domain reception path candidate
10 obtaining means for requesting a destination node for
obtaining a group of candidate paths from the node in
question toward the destination node; and

end-to-end path selection means;

wherein said end-to-end path selection means
15 selecting an optimum path end to end based on paths in
the domain of the node in question, interdomain paths
from the domain in question to the destination domain
and paths in the domain of the destination node.

2. The interdomain routing system as set forth in
claim 1, wherein

said own intradomain path selection means
includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth
metric and a QoS metric of a link.

3. The interdomain routing system as set forth in claim 1, wherein

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

4. The interdomain routing system as set forth in claim 1, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link, and

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

5. The interdomain routing system as set forth in claim 1, wherein

said interdomain path selection means is provided at an external node other than a transmission node or a destination node, so that said transmission node or said destination node obtains path information by inquiring of the interdomain path selection means existing in the other external node.

6. The interdomain routing system as set forth in claim 1, wherein

as a transmission node, an arbitrary node for relay is selected as a transmission proxy node and as a destination node, an arbitrary node for relay is selected as a destination proxy node.

7. An interdomain routing system wherein a node, comprising:

own intradomain path selection means for selecting a path by exchanging information about a path in the own domain;

interdomain path selection means for receiving information about a path between domains to select a path; and

domain reception path candidate reply means responsive to a request from a transmission node for returning, as a reply, a group of candidate paths from the transmission node toward the node in question.

8. The interdomain routing system as set forth in claim 7, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link.

9. The interdomain routing system as set forth in claim 7, wherein

said interdomain path selection means includes means for exchanging topology of a network between
5 domains and link resource information such as a bandwidth metric and a QoS metric of a link.

10. The interdomain routing system as set forth in claim 7, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth metric and a QoS metric of a link, and

said interdomain path selection means includes means for exchanging topology of a network between
10 domains and link resource information such as a bandwidth metric and a QoS metric of a link.

11. The interdomain routing system as set forth in claim 7, wherein

said interdomain path selection means is provided at an external node other than a transmission node or a
5 destination node, so that said transmission node or said destination node obtains path information by inquiring of the interdomain path selection means existing in the other external node.

12. The interdomain routing system as set forth in claim 7, wherein

as a transmission node, an arbitrary node for relay is selected as a transmission proxy node and as a destination node, an arbitrary node for relay is selected as a destination proxy node.

13. An interdomain routing system having a transmission node and a destination node, wherein

said transmission node including own intradomain path selection means for selecting a path by exchanging information about a path in the own domain,

interdomain path selection means for receiving information about a path between domains to select a path,

destination domain reception path candidate obtaining means for requesting a destination node for obtaining a group of candidate paths from the transmission node toward the destination node, and end-to-end path selection means for selecting an optimum path end to end based on paths in the domain of the transmission node, interdomain paths from the transmission domain to the destination domain and paths in the domain of the destination node, and said destination node including

20 own intradomain path selection means for
selecting a path by exchanging information about a path
in a domain,

 interdomain path selection means for receiving
information about a path between domains to select a
25 path, and

 destination domain reception path candidate reply
means responsive to a request from the transmission node
for returning, as a reply, a group of candidate paths
from the transmission node toward the destination node.

30 14. The interdomain routing system as set forth in
claim 13, wherein

 said own intradomain path selection means
includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth
metric and a QoS metric of a link.

15. The interdomain routing system as set forth in
claim 13, wherein

 said interdomain path selection means includes
means for exchanging topology of a network between
5 domains and link resource information such as a
bandwidth metric and a QoS metric of a link.

16. The interdomain routing system as set forth in
claim 13, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link, and

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

17. The interdomain routing system as set forth in claim 13, wherein

said interdomain path selection means is provided at an external node other than a transmission node or a destination node, so that said transmission node or said destination node obtains path information by inquiring of the interdomain path selection means existing in the other external node.

18. The interdomain routing system as set forth in claim 13, wherein

as a transmission node, an arbitrary node for relay is selected as a transmission proxy node and as a destination node, an arbitrary node for relay is selected as a destination proxy node.

19. An interdomain routing system having a node, wherein

said node comprising

own intradomain path selection means for

5 selecting a path by exchanging information about a path
in the own domain,

interdomain path selection means for receiving
information about a path between domains to select a
path,

10 destination domain transmission path candidate
obtaining means for requesting a destination node for
obtaining a group of candidate paths from the
destination node toward the node in question, and

15 end-to-end path selection means, said end-to-end
path selection means selecting an optimum path end to
end based on paths in the domain of the destination node,
interdomain paths from the destination domain to the
domain in question and paths in the domain of the node
in question.

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20. The interdomain routing system as set forth in
claim 19, wherein

said destination domain path candidate obtaining
means has a function of obtaining, as a group of
5 candidate paths from a destination node toward a
transmission node, both of paths in the destination
domain and interdomain paths from the destination domain
to the transmission domain.

21. The interdomain routing system as set forth in claim 19, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link.

22. The interdomain routing system as set forth in claim 19, wherein

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

23. The interdomain routing system as set forth in claim 19, wherein

said intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link, and

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

24. The interdomain routing system as set forth in claim 19, wherein

said interdomain path selection means is provided
at an external node other than a transmission node or a
5 destination node, so that said transmission node or said
destination node obtains path information by inquiring
of the interdomain path selection means existing in the
other external node.

25. The interdomain routing system as set forth in
claim 19, wherein

as a transmission node, an arbitrary node for
relay is selected as a transmission proxy node and as a
5 destination node, an arbitrary node for relay is
selected as a destination proxy node.

26. An interdomain routing system having a node,
wherein

said node comprising:

own intradomain path selection means for
5 selecting a path by exchanging information about a path
in the own domain,

interdomain path selection means for receiving
information about a path between domains to select a
path, and

10 domain transmission path candidate reply means
responsive to a request from a transmission node for
returning, as a reply, a group of candidate paths from
the node in question toward the transmission node.

27. The interdomain routing system as set forth in claim 26, wherein

said destination domain path candidate obtaining means has a function of obtaining, as a group of
5 candidate paths from a destination node toward a transmission node, both of paths in the destination domain and interdomain paths from the destination domain to the transmission domain.

28. The interdomain routing system as set forth in claim 26, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth
5 metric and a QoS metric of a link.

29. The interdomain routing system as set forth in claim 26, wherein

said interdomain path selection means includes means for exchanging topology of a network between
5 domains and link resource information such as a bandwidth metric and a QoS metric of a link.

30. The interdomain routing system as set forth in claim 26, wherein

said intradomain path selection means includes

means for exchanging topology of a network in a domain
5 and link resource information such as a bandwidth metric
and a QoS metric of a link, and

said interdomain path selection means includes
means for exchanging topology of a network between
domains and link resource information such as a
10 bandwidth metric and a QoS metric of a link.

31. The interdomain routing system as set forth in
claim 26, wherein

said interdomain path selection means is provided
at an external node other than a transmission node or a
5 destination node, so that said transmission node or said
destination node obtains path information by inquiring
of the interdomain path selection means existing in the
other external node.

32. The interdomain routing system as set forth in
claim 26, wherein

as a transmission node, an arbitrary node for
relay is selected as a transmission proxy node and as a
5 destination node, an arbitrary node for relay is
selected as a destination proxy node.

33. An interdomain routing system having a
transmission node and a destination node, wherein

said transmission node including

own intradomain path selection means for
5 selecting a path by exchanging information about a path
in the own domain,

interdomain path selection means for receiving
information about a path between domains to select a
path,

10 destination domain transmission path candidate
obtaining means for requesting a destination node for
obtaining a group of candidate paths from the
destination node toward the transmission node, and

end-to-end path selection means for selecting an
15 optimum path end to end based on paths in the domain of
the destination node, interdomain paths from the
destination domain to the transmission domain and paths
in the domain of the transmission node, and

said destination node including

20 own intradomain path selection means for
selecting a path by exchanging information about a path
in a domain,

interdomain path selection means for receiving
information about a path between domains to select a
25 path, and

destination domain transmission path candidate
reply means responsive to a request from the
transmission node for returning, as a reply, a group of
candidate paths from the destination node toward the
30 transmission node.

34. The interdomain routing system as set forth in claim 33, wherein

said destination domain path candidate obtaining means has a function of obtaining, as a group of
5 candidate paths from a destination node toward a transmission node, both of paths in the destination domain and interdomain paths from the destination domain to the transmission domain.

35. The interdomain routing system as set forth in claim 33, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth metric and a QoS metric of a link.

36. The interdomain routing system as set forth in claim 33, wherein

said interdomain path selection means includes means for exchanging topology of a network between
5 domains and link resource information such as a bandwidth metric and a QoS metric of a link.

37. The interdomain routing system as set forth in claim 33, wherein

said intradomain path selection means includes

means for exchanging topology of a network in a domain
5 and link resource information such as a bandwidth metric
and a QoS metric of a link, and

said interdomain path selection means includes
means for exchanging topology of a network between
domains and link resource information such as a
10 bandwidth metric and a QoS metric of a link.

38. The interdomain routing system as set forth in
claim 33, wherein

said interdomain path selection means is provided
at an external node other than a transmission node or a
5 destination node, so that said transmission node or said
destination node obtains path information by inquiring
of the interdomain path selection means existing in the
other external node.

39. The interdomain routing system as set forth in
claim 33, wherein

as a transmission node, an arbitrary node for
relay is selected as a transmission proxy node and as a
5 destination node, an arbitrary node for relay is
selected as a destination proxy node.

40. An interdomain routing system having a node,
wherin

said node comprising

own intradomain path selection means for
5 selecting a path by exchanging information about a path
in the own domain,

interdomain path selection means for receiving
information about a path between domains to select a
path,

10 destination domain transmission path candidate
obtaining means for inquiring of a plurality of
destination node candidates about service object
transfer to obtain a group of candidate paths from each
of the destination node candidates toward the node in
15 question and a processing load of a service node which
conducts the service object processing in question, and

service node path selection means for selecting
an optimum service node and end-to-end path by making a
comparison of end-to-end path costs based on a
20 processing load of each service node, paths in the
domain of the destination node, interdomain paths from
the destination domain to the transmission domain and
paths in the domain of the transmission node.

41. The interdomain routing system as set forth in
claim 40, wherein

said own intradomain path selection means
includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth
metric and a QoS metric of a link.

42. The interdomain routing system as set forth in claim 40, wherein

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

43. The interdomain routing system as set forth in claim 40, wherein

said own intradomain path selection means includes means for exchanging topology of a network in a domain and link resource information such as a bandwidth metric and a QoS metric of a link, and

said interdomain path selection means includes means for exchanging topology of a network between domains and link resource information such as a bandwidth metric and a QoS metric of a link.

44. The interdomain routing system as set forth in claim 40, wherein

said interdomain path selection means is provided at an external node other than a transmission node or a destination node, so that said transmission node or said destination node obtains path information by inquiring of the interdomain path selection means existing in the other external node.

45. The interdomain routing system as set forth in claim 40, wherein

as a transmission node, an arbitrary node for relay is selected as a transmission proxy node and as a destination node, an arbitrary node for relay is selected as a destination proxy node.

46. The interdomain routing system as set forth in claim 40, wherein

as a service node processing load, a network load at the communication of service results is used in addition to a CPU load of service processing.

47. The interdomain routing system as set forth in claim 40, wherein

as a service object, a URL is used and as said service node, a Web server is used.

48. An interdomain routing system having a node, wherein

said node comprising
own intradomain path selection means for selecting a path by exchanging information about a path in the own domain,

interdomain path selection means for receiving information about a path between domains to select a

path,

10 a service node load monitoring procedure for
monitoring a processing load of a service node, and
 destination domain transmission path candidate
reply means responsive to a request from a transmission
node for returning a group of candidate paths from the
15 node in question toward the transmission node and a
service node load as a reply.

49. The interdomain routing system as set forth in
claim 48, wherein

 said own intradomain path selection means
includes means for exchanging topology of a network in a
5 domain and link resource information such as a bandwidth
metric and a QoS metric of a link.

50. The interdomain routing system as set forth in
claim 48, wherein

 said interdomain path selection means includes
means for exchanging topology of a network between
5 domains and link resource information such as a
bandwidth metric and a QoS metric of a link.

51. The interdomain routing system as set forth in
claim 48, wherein

 said own intradomain path selection means
includes means for exchanging topology of a network in a

5 domain and link resource information such as a bandwidth
metric and a QoS metric of a link, and

said interdomain path selection means includes
means for exchanging topology of a network between
domains and link resource information such as a
10 bandwidth metric and a QoS metric of a link.

52. The interdomain routing system as set forth in
claim 48, wherein

said interdomain path selection means is provided
at an external node other than a transmission node or a
5 destination node, so that said transmission node or said
destination node obtains path information by inquiring
of the interdomain path selection means existing in the
other external node.

53. The interdomain routing system as set forth in
claim 48, wherein

as a transmission node, an arbitrary node for
relay is selected as a transmission proxy node and as a
5 destination node, an arbitrary node for relay is
selected as a destination proxy node.

54. The interdomain routing system as set forth in
claim 48, wherein

a destination node has address resolution request
means to select any of a plurality of transmission nodes

5 by an address resolution server function.

55. The interdomain routing system as set forth in claim 54, wherein

said destination node sets up a session with selected said transmission node and said selected
5 transmission node notifies said destination node of an address of other transmission node as required to switch the session.

56. The interdomain routing system as set forth in claim 48, wherein

as a service node processing load, a network load at the communication of service results is used in
5 addition to a CPU load of service processing.

57. The interdomain routing system as set forth in claim 48, wherein

as a service object, a URL is used and as said service node, a Web server is used.

58. An interdomain routing system having a transmission node and a destination node, wherein

said transmission node including
own intradomain path selection means for
5 selecting a path by exchanging information about a path in the own domain,

interdomain path selection means for receiving information about a path between domains to select a path,

10 destination domain transmission path candidate obtaining means for inquiring of a plurality of destination node candidates about service object transfer to obtain a group of candidate paths from each of the destination node candidates toward the node in
15 question and a processing load of a service node which conducts the service object processing in question, and

service node path selection means for selecting an optimum service node and end-to-end path by making a comparison of end-to-end path costs based on a
20 processing load of each service node, paths in the domain of the destination node, interdomain paths from the destination domain to the transmission domain and paths in the domain of the transmission node, and

said destination node including

25 own intradomain path selection means for selecting a path by exchanging information about a path in the own domain,

interdomain path selection means for receiving information about a path between domains to select a
30 path,

a service node load monitoring procedure for monitoring a processing load of a service node, and

destination domain transmission path candidate

35 reply means responsive to a request from a transmission
node for returning a group of candidate paths from the
node in question toward the transmission node and a
service node load as a reply.

59. The interdomain routing system as set forth in
claim 58, wherein

 said own intradomain path selection means
includes means for exchanging topology of a network in a
domain and link resource information such as a bandwidth
metric and a QoS metric of a link.

60. The interdomain routing system as set forth in
claim 58, wherein

 said interdomain path selection means includes
means for exchanging topology of a network between
domains and link resource information such as a
bandwidth metric and a QoS metric of a link.

61. The interdomain routing system as set forth in
claim 58, wherein

 said own intradomain path selection means
includes means for exchanging topology of a network in a
domain and link resource information such as a bandwidth
metric and a QoS metric of a link, and

 said interdomain path selection means includes
means for exchanging topology of a network between

domains and link resource information such as a
10 bandwidth metric and a QoS metric of a link.

62. The interdomain routing system as set forth in
claim 58, wherein

said interdomain path selection means is provided
at an external node other than a transmission node or a
5 destination node, so that said transmission node or said
destination node obtains path information by inquiring
of the interdomain path selection means existing in the
other external node.

63. The interdomain routing system as set forth in
claim 58, wherein

as a transmission node, an arbitrary node for
relay is selected as a transmission proxy node and as a
5 destination node, an arbitrary node for relay is
selected as a destination proxy node.

64. The interdomain routing system as set forth in
claim 58, wherein

as a service node processing load, a network load
at the communication of service results is used in
5 addition to a CPU load of service processing.

65. The interdomain routing system as set forth in
claim 58, wherein

as a service object, a URL is used and as said
service node, a Web server is used.